What is claimed is:

1. An electronic access control device comprising:

an electrical device energizable to effect a predetermined operation;

an energizing circuit for energizing the electrical device;

an input device for inputting a control signal;

a control circuit including first and second microprocessors, the second microprocessor being remote from the first microprocessor, the first microprocessor coupled to the input device for receiving the control signal, the second microprocessor coupled to the energizing circuit for activation thereof, the first microprocessor including means for transmitting a communication code to the second microprocessor in response to the control signal, the second microprocessor including means for comparing the transmitted communication code to a preset communication code and activating the energizing circuit when the transmitted communication code matches the preset communication code.

2. An electronic access control device as in claim 1, wherein the electrical device is a solenoid coupled to a lock for opening and closing the lock.

3. An electronic access control device as in claim 2, wherein the control circuit controls the energizing circuit to supply sufficient power to energize the solenoid to open the lock until a first preset time has elapsed in the timer and then supply a lower amount of power until a second preset time has elapsed as specified by the timer.

4. An electronic access control device as in claim

1, wherein the electrical device is a motor coupled to a lock for opening and closing the lock.

5. An electronic access control device as in claim 1, wherein the input device includes a keypad for entering an access code as the control signal.

6. An electronic access control device as in claim 1, wherein the input device includes an electronic key reader for communicating with an electronic key.

7. An electronic access control device as in claim 6, wherein the electronic key has a memory for storing an access code and a number of access, the first microprocessor transmitting the communication code to the second microprocessor in response to detecting the access code in the electronic key when the number of access is at least one and reducing the number of access in the electronic key by one in conjunction with the transmission of the communication code.

8. An electronic access control device as in claim 1, wherein the input device is an ignition switch of a motorcycle having an ignition position and an accessory position, and wherein the first microprocessor transmits the communication code when the ignition switch is set at one of the ignition and accessory positions.

9. An electronic access control device as in claim 1, wherein the first microprocessor is disposed in a portable unit, and wherein the electrical device is a motor disposed in a tool container for locking and unlocking the tool container.

10. An electronic access control device as in claim 1, further including:

a battery pack providing electrical energy at a

battery voltage;

a voltage regulator receiving the battery voltage and generating a regulated voltage for powering the control circuit; and

a low-battery detection circuit including a voltage divider having an input end connected to the battery voltage and an output end providing an output voltage, a first transistor in series with the voltage divider for controlling current flow through the voltage divider, a second transistor having an input end connected to the regulated voltage and a base connected to the output voltage of the voltage divider, the voltage divider turning the second transistor on when the output voltage of the voltage divider falls below a predetermined voltage,

the control circuit having a control line connected to a base of the first transistor for selectively turning the first transistor on and off, and a sensing line connected to an output end of the second transistor for sensing the on/off state of the second transistor.

11. An electronic access control device as in claim 1, further including a non-volatile memory for storing the preset communication code and a communication port connected to the control circuit for inserting the preset communication code into the non-volatile memory and retrieving the preset communication code from the non-volatile memory.

12. An electronic access control device as in claim 1, wherein the input device includes a voice recognition circuit coupled with a microphone for receiving voice commands.

13. An electronic access control device as in claim 1, wherein the first microprocessor is a voice recognition integrated circuit connected to a microphone

for receiving voice commands.

14. An electronic access control device as in claim 1, further including a transmitter circuit for wireless transmission of the communication code from the first microprocessor to the second microprocessor.

15. An electronic access control device as in claim 14, further including a voice recognition integrated circuit for receiving voice commands.

16. A method of controlling the operation of an electronic lock system which includes a lock, a control signal input device, a control circuit including a first microprocessor connected to the control signal input device and a second microprocessor remote from the first microprocessor and controlling the opening of the lock, the method comprising the steps of:

receiving a control signal by the first microprocessor through the control signal input device;

transmitting, in response to the control signal received, a communication code from the first microprocessor to the second microprocessor;

comparing by the second microprocessor the transmitted communication code with a preset communication code;

enabling by the second microprocessor the opening of the lock when the transmitted communication code matches the preset communication code.

17. A method as in claim 16, wherein the control signal input device is a keypad, and wherein the step of receiving receives an access code entered through the keypad as the control signal.

18. A method as in claim 16, further including the step of comparing by the first microprocessor the

received access code to a preset access code.

19. A method as in claim 18, further including the steps of transmitting the preset access code and the preset communication code from the second microprocessor to the first microprocessor and storing the preset access code and the preset communication code in a memory of the first microprocessor during initial activation of the electronic lock system.

20. A method as in claim 16, wherein the control signal input device is an electronic key reader for communicating with an electronic key having an access code and a number of access stored therein, and further including the step of decrementing the number of access in the electronic key by one in conjunction with the transmission of the communication code to the second microprocessor.

21. A voice controlled access control system comprising:

a voice sensor for receiving a voice command requesting a selected operation;

first and second microprocessor circuits, the first microprocessor circuit having a voice recognition circuit coupled to the voice sensor for recognizing the voice command and means for transmitting a communication code to the second microprocessor circuit in response to the recognition of the voice command, the second microprocessor including means for comparing the transmitted communication code to a preset communication code and means for carrying out the selected operation when the transmitted and preset communication codes match.

22. A voice controlled access control system as in claim 21, wherein the first microprocessor circuit is a

voice recognition integrated circuit.

23. A voice controlled access control system as in claim 21, wherein the first microprocessor circuit includes a transmitter circuit for transmitting wirelessly the communication code to the second microprocessor circuit.

24. A voice controlled access control system as in claim 23, wherein the first microprocessor circuit transmits in conjunction with the communication code an operation code corresponding to the selected operation.

25. A voice controlled access control system as in claim 24, wherein the second microprocessor circuit is connected to a lock mechanism in a tool container for locking and unlocking the tool container.

26. A voice controlled access control system as in claim 24, wherein the second microprocessor circuit is connected to a lock mechanism in an office for locking and unlocking storage compartments in the office.

27. A method of assembling an electronic access control device having a microprocessor-based control circuit which has a plurality of components including a non-volatile memory for storing an access code, the method comprising:

installing the non-volatile memory in the microprocessor-based control circuit, the non-volatile memory not having the access code stored therein;

installing a communication port connected to the microprocessor-based control circuit for accessing the non-volatile memory;

completing assembling the microprocessor-based control circuit; and

after the completion of the microprocessor-based

control circuit, writing the access code to the non-volatile memory through the communication port; and

reading the access code back from the non-volatile memory through the communication port for confirmation.

28. A method as in claim 27, wherein the non-volatile memory is an electrically erasable programmable memory.

29. A method as in claim 28, wherein the non-volatile memory is a FLASH read-write memory.

30. An electrical access control device comprising:

a lock;

a keypad for entering a user-entered access code;

a control circuit for controlling the opening of the lock in response to receiving a user-entered access code that matches a preset access code, the control circuit including at least one microprocessor having a plurality of pins connected to the keypad for receiving the user-entered access code;

a non-volatile memory external of the microprocessor for storing the preset access code, the non-volatile memory being connected to at least one of said plurality of pins of the microprocessor connected to the keypad for data transfer between the microprocessor and the non-volatile memory.

31. An electronic access control device comprising:

a microprocessor-based control circuit;

a battery pack providing electrical energy at a battery voltage;

a voltage regulator receiving the battery voltage and generating a regulated voltage for powering the microprocessor-based control circuit; and

a low-battery detection circuit including a voltage divider having an input end connected to the battery voltage and an output end providing an output voltage, a first transistor in series with the voltage divider for controlling current flow through the voltage divider, a second transistor having an input end connected to the regulated voltage and a base connected to the output voltage of the voltage divider, the voltage divider turning the second transistor on when the output voltage of the voltage divider falls below a predetermined voltage,

the control circuit having a control line connected to a base of the first transistor for selectively turning the first transistor on and off, and a sensing line connected to an output end of the second transistor for sensing the on/off state of the second transistor.

32. An electronic access control device as in claim 31, wherein the control circuit includes first and second microprocessors, the second microprocessor being remote from the first microprocessor, the first microprocessor including means for transmitting a communication code to the second microprocessor in response to receipt of a control signal, the second microprocessor including means for comparing the transmitted communication code to a preset communication code.

33. An electronic access control device as in claim 31, wherein the control circuit includes a key reader for detecting an access code and a number of access stored in an electronic key, the control circuit detecting the access code in the electronic key and decrementing the number of access stored in the electronic key by one when the detected access code matches a preset access code and the detected number of access is at least one.

34. An electronic access control system comprising:

an electronic key having a memory for storing an access code and a number of access;

a master control device having an interfacing device for communicating with the electronic key to program the access code and the number of access into the electronic key;

at least one electronic lock controlling device remote from the master control device for controlling the opening of a lock, the electronic lock controlling device having a key reader for communicating with the electronic key, the electronic lock controlling device opening the lock in response to detecting the access code in the electronic key when the number of access is at least one and reducing the number of access in the electronic key by one in conjunction with the opening of the lock.

35. An electronic access control system as in claim 34, wherein the electronic lock controlling device includes first and second microprocessors, the second microprocessor being remote from the first microprocessor, the first microprocessor coupled to the key reader for communicating with the electronic key, the second microprocessor coupled to an energizing circuit for opening the lock, the first microprocessor including means for transmitting a communication code to the second microprocessor in response to detecting the access code in the electronic key, the second microprocessor including means for comparing the transmitted communication code to a preset communication code and activating the energizing circuit to open the lock when the transmitted communication code matches the preset communication code.

36. An electronic access control system as in claim 34, wherein the master control device is a personal computer having an interface device for communicating with the electronic key.

37. An electronic alarm system for a manually powered vehicle comprising:

a control signal transmitter mounted in a riding helmet for wireless transmission of control signals;

an alarm system mounted on the vehicle, the alarm system including a receiver for receiving the control signals from the control signal transmitter in the helmet for activating and deactivating the alarm system, a motion detector for detecting movement of the vehicle, and an alarm circuit for generating alarm signals when movement of the vehicle is detected when the alarm system is activated.

38. An electronic alarm system as in claim 37, wherein the manually powered vehicle is a bicycle.

39. An electronic lock comprising:

a lock;

a solenoid coupled to the lock for opening and closing the lock;

a microprocessor-based control circuit including a driver circuit for energizing the solenoid and a timer, the control circuit controlling the driver circuit to supply sufficient power to energize the solenoid to open the lock until a first preset time has elapsed in the timer and then supply a lower amount of power until a second preset time has elapsed as specified by the timer.

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